The History of India Rubber in the United States.

We proposed, some time ago, to give a brief history of the various discoveries and improvements made in the United States, in the India rubber art, and mark the periods when they took place, to show the rise and progress of this now valuable and extensive manufacture. Our investigations have been carefully made, and honor will be accorded where it is due. It is indispensable to a correct understanding of the subject, to glance at the early discoveries of the substance of India rubber itself, clearly to define the honor due to American discoveries, and indicate all new inventions.

The introduction of India rubber from South America into Europe, was almost contemporaneous with its discovery by a French naturalist, about the middle of the last century; but we have no account of its application, to any extent, in the arts, until about 1820, when efforts were made to introduce the milk of the tree, and to apply it to cloths and other fabrics, for the purpose of rendering them water-proof. These experiments were, however, unsuccessful. When the substance was first introduced into Europe, it was of the natural color, as concreted from the juice of the tree; and this color was a light drab. As early as 1820, the Brazilian Indians discovered a mode of curing rubber, and adapting it to use in the form of shoes. This curing process was, and still is, very simple. It consists in combining a small portion of carbon and vegetable oil. The Indian first obtains an earthen vessel, rudely formed of clay, in the shape of a sugar-loaf, with a small aperture at the top; this is supported, with the base resting on projections of stone, raising it from the ground sufficiently to allow the air to pass to the fire, which is built of bark, or leaves and wood. A peculiar nut, from a tree of the same forest, and which yields an oil, is always used to increase the smoke, and which, in the process of burning, gives out the oil. The operation commences by pouring the juice of the rubber tree on to the last, or block on which the shoe is made. The consistence of this juice is very much like that of our milkweed. The last is held over the apex or aperature of the earthen vessel, out of which the smoke and heat pass, while the nuts are burning. A few seconds are enough to complete this coating, and when dry, it is so thin as scarcely to be perceptible upon the last. The last is then put aside to dry, and another taken in hand, and the operation continued successively upon a dozen or more lasts, by every operator. In this manner from twenty to thirty *laminæ* are applied successively; and when completed, the shoe is suspended in the shade to harden, and thus prepared for shipment.

Although the India rubber tree is found in Asia, Africa, and the Indian Archipelagoes, (in great quantities near the equator,) no manufacture or application of it to useful purposes has ever been attempted to any considerable extent except by the Brazilian Indians, in whose country the art of curing it is practised as we have described. The quality of the India rubber deteriorates in proportion as the distance from the equator increases: hence the article obtained from Carthagena, small lots of which have been imported into the United States during the last ten years, has always sold at a lower price than the rubber of Para. Many efforts have been made to import the milk itself, but without success. Mr. Norris, now our Consul at Para, was sent out there about ten years ago for this purpose, by a gentleman of this city, and to introduce the art of preparing the milk, and of applying it, as concreted, to the cloth by the aid of machinery. He expended a good deal of money in these experiments, but they were without success. With a temperature of one hundred degrees in the shade, northern men cannot work; the native Indians can supply their wants for a penny a day.

In 1823, Charles Macintosh, of Manchester, England, perfected his famous discovery of rendering a cloth water proof, which afterwards bore his name. This was partially accomplished by dissolving the rubber, and applying the solution, first with a brush, and afterwards by spreading it on with a knife. Two surfaces thus prepared were united, and by this means, Macintosh and his associates monopolized all the manufactures prepared in this way, and accumulated a large fortune.

From this time till about 1830, few improvements were made in England, or on the Continent. Only four or five patents were taken out, and they were for inventions of no material importance. From 1830 to 1838, the number of patents issued in England for the manufacture or application of India rubber, was thirty; some of which were invented in this country, and became monopolies to enterprising speculators who were the first to introduce them into the British dominions.

The British government bases its law of patents on a wise national policy, granting monopolies to the first who introduces a new art or discovery into the British dominions, whether they are the inventors or not, while our own laws grant patents only to the original inventor or his assignee. Justice is in this way—in form, at least, if not in fact—secured to individuals, but no regard is had to the manufacturing interest of the country.

From 1839 till the present time, some forty patents have been granted in England, for India rubber manufactures, or for machinery, more than half of which have been for American discoveries chiefly monopolized by mere introducers of them, under the laws of Great Britain. Nearly three times as many India rubber patents have been issued in England as in the United States, and yet we believe that our manufactures in this article have greatly exceeded those in England, with the exception of braces and other textile fabrics, in which England and France have hitherto had almost the entire control.

One of the most important manufactures of rubber among us, is what is called the rubber clothes, since from these are made almost all articles of clothing, &c. This manufacture was successfully accomplished in the United States, during the years 1827, '28, and '29, when the idea of combining other substances, such as carbon, paints, ochre and other earthy materials with the rubber, and applied to surfaces of cloth, rendering it capable of resisting, to a great extent, the decomposing influences of the sun and atmosphere. The English mode of treating rubber did not enable the manufacturer to accomplish this result. It was unknown in Europe, and the idea of preparing the rubber itself to form one surface of the fabric, was entirely new.

The first and principal object the enterprising projector sought to accomplish, was to imitate, in his fabric, the appearance of leather. One of the means of effecting this, was by incorporating paints in dry powder, and carbon in the form of powder with the rubber.

The great success of this discovery may be regarded as the most important ever made in this branch of manufacture; and probably not fifty persons in the United States know that Dr. Howe ever turned his attention to the subject at all, much less that he was the author. The burning of the patent office in 1835, destroyed the public record of the fact; but the original parchment of the patent issued to him, still remains; and the distinguished author himself, now resides in Birmingham, Conn. The title of his patent is in these words:—"That he has invented a new and useful improvement, being a composition of matter to be used as a flexible waterproof, and airproof solution, paint or varnish." The author first describes a portion of his discovery, as combining with rubber one or more of the resins, prepared after a mode discovered by him, and proceeds to say:—"This composition may be used with or without any addition or combination with the various bodies known and used as colors or paints in oil painting."

Lampblack was used to impart a black color, and serve also as a treatment to resist the softening and decomposing effect of the rays of the sun. The author proceeds to say:—"When this is properly applied upon the surface of cloth, paper, leather, or other flexible or porous body, and the oil (turpentine) allowed to evaporate, it forms upon such a surface a strong, smooth, flexible, and elastic sheet, or coating, which will effectually exclude water and air, and retain its useful properties under any circumstance of exposure to the sun or weather."

Dr. Howe closes his patent specifications in these words:—"Colors or paints may be combined with the said composition (rubber and resin, softened with the oil of turpentine,) by any of the methods commonly used in mixing and preparing oil paints."

Like most chemical processes, slight differences produce important changes in the manufacture of india rubber; and now, after more than twenty years have passed, we see the most beautiful article of rubber shoes made by combining lampblack and rubber with earthy matter and a small quantity of resin.

This discovery of Dr. Howe, with slight modifications, is still in use in this country and in England, in almost all the india rubber fabrics which are made.

The next discovery in treating India rubber, which merits notice, is that of combining with that of Dr. Howe's composition the article of sulphur. This discovery, which is of immense importance, was also made by an American, by the name of Nathaniel Hayward, in Boston, in the month of October, 1834. The mixing of sulphur with India rubber was almost entirely confined, for some time, to one establishment, viz: the corporation known as the Eagle India Rubber Company, at Woburn, Mass., and they kept the process in part secret for about five years; and yet this company did not apply it extensively, for, although it was organized to develope Mr. Hayward's inventions, after a few years they sold out, Mr. Hayward continuing the business.

The chief benefit resulting from the invention was to improve the drying of the composition, and there was a serious objection in the use of sulphur, since it imparted a strong smell to the goods so prepared; and we speak of it as one of great importance, chiefly because of the connection it had with subsequent improvements by the same discoverer.

It was about the year 1838, we believe, that another gentleman took out his first patent for treating India rubber. The object of this invention was to remove the agglutinous, or "sticky properties," (to use the words of the patent,) and consisted in the immersion of the fabrics in acids. Under this process; if the textile fabrics were not entirely covered with rubber, they would be partially destroyed; hence much difficulty attended the treatment, and but few articles could be successfully produced, so that this invention was abandoned for all general purposes.

About 1836, a gentleman now connected with the Erie Railroad Company, with Col. Barrett, of Staten Island, formed a company, which was chartered by the State of New York, and located on Staten Island. This company so far improved on Dr. Howe's method, as to produce rubber shoes of a composition which presented the appearance of fine kid. This was accomplished by incorporating about 80 per cent, by weight, of calcined lampblack with the rubber. Up to this period, the process most generally used was to mix a smaller quantity of lampblack, which generally had the effect of decomposing the rubber, after a few months exposure.

Dr. Howe himself did not describe the quantity in his patent, and from the time of his discovery in 1827, or 1828, until Daniel Winslow, the foreman of the Staten Island company, made his discovery of so large a proportion of lampblack, the manufacturing of India Rubber proved in most establishments an uncertain, and unsatisfactory business. This simple discovery (of the quantity of lampblack to be used) enabled all who knew the secret, to produce good fabrics; and the goods which were made by mixing 80 parts of lampblack with 100 parts of rubber, continued, until 1846, to be the most perfect fabric in the market; and millions of dollars worth of them have been manufactured and sold; and up to the present time no treatment of India rubber has been discovered, by which it is capable of withstanding exposure to sunshine and weather, for a single year, except this. The article of carriage-top cloth, now so much used, is thus prepared, and has been substantially by the same process for fifteen years. Shoes were always made in this manner until 1846, when vulcanized rubber began to take their place.

There is one article which has been manufactured extensively and successfully, in which these compounds were omitted—we refer to the article known as the "Providence shoes." They were made by a process somewhat different from the ordinary treatment, and we will glance at it.

A portion of solvent, just enough to cause the rubber to swell, was poured upon it, and, during the masticating process, just lampblack enough was added to color the rubber. Shoes prepared in this manner have been sold for more than a million of dollars and constituted one style of shoe in the market from 1839 till 1849, when the manufacture ceased altogether.

There is another mode of treatment, which has resulted partly from the discovery of Dr. Howe, and partly from the sulphur process of Hayward, and about which so much controversy has existed. It is now about ten years since the first successful developement of it came to the public notice, since which, successive improvements have been made, and eight or nine patents granted, for as many different modes of making vulcanized rubber, a majority of which are American discoveries. When this process is fully explored, it will probably supersede most, if not all others, for many articles.

A great deal of controversy has existed about the authorship of these various improvements, and we shall describe the goods as they came before the public. The first specimens of rubber, which were so cured as to resist the changing effects of heat and cold, were made by Daniel Hayward, brother of Nathaniel, at Easton, Mass. Hayward built an oven before 1837, which served for a great variety of experiments; and, in connection with the use of sulphur, and other materials, he made cloth (samples of which are yet in existence), which would withstand the changes of heat and cold. The partial success which attended these discoveries led the Haywards to other and various experiments, to produce what they called "fire proof rubber." In the winter of 1840 and '41, the fabric which had been made by the mixture of paints and sulphur was successfully treated, and shoes and other articles then made, on a small scale, at Woburn, near Boston; and, during this period, till 1847, the same general process continued in their production and manufacture in the United States; and, although no uniform or certain results were obtained, yet the fabric which had acquired the name of "metallic rubber," from the fact that white lead formed part of the compound, was found to answer many useful purposes. This fabric was made by mixing rubber 25 pounds, sulphur 5 pounds, and white lead 7 pounds, and submitting the compound to an atmosphere heated to 270 degrees, Fahrenheit. One of the great objections to this process of treating rubber was its uncertain results. Another was its offensive smell, and a third was its rapid destruction when exposed to the sun and atmosphere, for it was soon discovered that after being exposed to sun and atmosphere for a few months, it cracked and lost all its elasticity. Various efforts were made to obviate these difficulties, but with very little success, until the discovery made by Hancock, in Manchester, England, in 1843. By a careful chemical analysis, he discovered that the metallic basis was the cause of the injury to the fabrics when exposed, and a natural earth was substituted. There was still, however, another difficulty. By mixing the rubber with sulphur and this natural earth, the necessary change could no longer be produced by an atmosphere of heat; but by a substitution of steam, the object was accomplished. The presence of nitrogen in the atmosphere, and its absence in steam heat, will readily account for this. Although this discovery was patented in England in November, 1843, the knowledge of it was not published in books till late in 1845; and it was not introduced in the United States, in our manufactures, till 1847.

In 1845, the process of treating rubber, by mixing it with sulphur alone, and curing it by steam, was also made in England, by Charles Kean, while engaged in experiments with rubber and gutta purcha, as we have ascertained from the London *Journal* of 1846. It is a well established fact, that rubber mixed with sulphur, and exposed to a heated atmosphere, cannot be vulcanized; hence the use of some other agent. The application of lead, as used by Dr. Howe, and sulphur, as used by Hayward, making a triple compound—which was patented in 1844—was the only successful process known in the United States, till the English discovery of what was termed vulcanizing, was introduced. Dr. Thomas, a chemist of New York, discovered, in 1846, that a mixture of rubber and hypo-sulphate of lead, prepared and submitted to steam heat, without the presence of sulphur, would produce a good fabric. The articles made by this combination, were, however, subject to the same difficulty, as the English mixture of a natural earth with the rubber and sulphur. It cannot be vulcanized in a heated atmosphere; but when heated in the presence of large proportions of hydrogen, (contained in steam,) it becomes perfectly vulcanized. This is the only vulcanized fabric ever yet made which is entirely free from offensive smell.

In the year 1847, (we believe) another gentleman of New York, took out a patent for combining magnesia with rubber and sulphur, submitting his compound to a high degree of heat. The rubber vulcanized by this compound, had all the appearance, and apparently useful properties, of that discovered by Hancock; but it was found that a simple exposure to the atmosphere, even in the shade, made it stiff, and it was found to crack, and this process of manufacturing has gone entirely out of use; it is also a curious fact that atmospheric heat would not produce the desired change on the rubber, under this process; hence steam was resorted to.

Next in order, was the discovery of Tyre and Helm, in 1846, and subsequently patented by them; which consisted in mixing a large proportion of the oxyde of zinc, with a minute quantity of sulphur, and exposing it to steam. A fabric was thus produced which withstood the effects of atmospheric changes, and is also useful in producing a light colored fabric. The greater proportion of fabrics now in the market, known as "Vulcanized India rubber," are made by mixing about four parts, by weight, of whiting, added to one part by weight of other substances, with three parts by weight of rubber, and exposed to steam at about 230 Fahrenheit. In some fabrics, a small portion of lead, in the form of carbonate, or oxyde, is incorporated; in which case the goods must not be exposed to the continued action of the atmosphere and the weather. The best preparation for constant exposure to the weather, is simple rubber and lampblack; and not vulcanized. Hence, the article of carriage coverings, of which immense quantities are used, is made according to the discovery of Winslow, in 1836, at Staten Island, and continues to be used for that and other similar purposes almost exclusively. The only objection to it, is, that it lacks that peculiar ductility which characterizes the best vulcanized rubber.

We must now briefly glance at the adaptation of the machinery necessary to the extensive and successful manufacturing of India rubber, and its application to useful purposes. Mackintosh, the English inventor, used, in 1822, a brush to apply the preparation of rubber to the foundation on which it was required; but soon afterwards he took out another patent, for spreading with a knife or straight edge of metal; and then suspended the goods in a heated room. No other method was practised till Dr. Howe commenced his operations. In 1828, that gentleman found some apparatus necessary to incorporate his paints and coloring matter with the softened rubber, and he first adopted the ordinary paint mills,; but he soon abandoned them for friction rollers, made of metal—one roller revolving faster than the other. This has continued, to the present time, to be the most successful and general process used in the United States. By the same kind of rollers (only that each revolved with equal speed,) the paste was rolled upon the cloth or into sheets; and this also continues to be the general process in this country and England, as well as on the continent. Some other means have prevailed, but only to a limited extent.

In 1832, Wm. Atkinson, (now of New York, but then of Lowell, Mass.,) took out a patent for his mode of preparing and applying rubber to cloth by means of steam heated cylinders. The same gentleman adapted another machine, not patented, but novel in its use. This machine operated somewhat upon the principle of a paper or a rag-cutting engine, and was used for softening the solid pieces of rubber, preparatory to the subsequent process of softening and spreading it.

About the year 1834, a gentleman of New Brunswick, New Jersey, built a machine upon the same principle, and for the same object; although, as has since been proved, he was entirely ignorant of the discovery of Atkinson. In 1836 the Roxbury India Rubber Company abandoned their process of spreading cloth, (in some respects the same as that patented by Macintosh, in England,) and adopted a process discovered by Edwin F. Chaffee, (one of their foremen,) which they patented. This consisted in the use of the ordinary calendering machine, with some additions and modifications, and constructed very strong—dispensed with a solvent—using a high degree of heat to soften the rubber, in combination with the power of the machinery. Although a patent was issued for this process in the name of Mr. Chaffee, and no doubt with great propriety, yet the same thing had been done before by Howe & Atkinson—a part by each—and the owners of the patent, learning that fact, allowed the invention to go into full and unrestricted use.

The pressing of the rubber in moulds, for various purposes, was done in England and the United States as early as 1839. One mode was to chop the rubber into pieces by means similar to chopping minced-meat; then to press it in moulds. A patent was obtained for this in the United States about that time. Two modes of applying rubber to cloth continue to be used. When a very thin laminæ or covering is required, the rubber, either compounded or pure, is softened to the consistence of jelly, and scraped on a cloth according to Macintosh's mode; or, secondly, it is made into a paste, by a sufficient solvent or heat, and rolled on between warm or heated calender rollers. By this latter means the sheets of rubber are made, and when cooled, peeled off from the cloth. The article of corrugated or shirred goods, first made by Dupont & Hyatt, and described in their patent in 1840, for the making of gores or elastic pieces in shoes and boots, was afterwards applied to suspenders and, with slight modifications, pantented in 1844. These goods are now made exclusively by machinery; and are produced with great rapidity. This process, also, was patented in 1844, the threads or cords being cut by another novel machine, invented and patented by Tyer & Helm. About the same time, another means of fabricating this class of goods was a very ingenious arrangement of new and peculiar machinery, invented and patented by James Bogardus, the distinguished author of many valuable discoveries, and whose last great invention is the iron buildings. The most perfect and successful machinery now in use is that invented by means of which these shirred goods have been almost exclusively made for the past five years, and the price reduced about eighty per cent from the original cost. Nearly allied to machinery, is the apparatus employed for the disposal of articles, preparatory to the application of heat for vulcanizing. The device first adopted by Hayward, in 1836, was a small oven, through which the cloth passed, and after going over a roller was returned back through the oven. In 1844, a process was patented which had been used by him in 1842, and consisted of an open furnace in the form of the old fashioned ten plate stove, with the top removed, and a roller running lengthwise; and the cloth, made into an endless band, a small part of which came into close proximity to the bottom plate, which was rendered to a red heat, and the endless band passing into another part of the building, and there supported by a roller. Afterwards, in 1843, he constructed a large room, the materials being plates of iron, in which the cloth and other articles were suspended—but neither of these modes accomplished the desired result. In 1842-3, rooms of brick were built, and so arranged the goods that they could be kept in motion within the oven, to equalize their exposure to the temperature, and so far as atmospheric heat is used, experience has demonstrated the absolute necessity of keeping the goods in constant motion within the heated chamber, to avoid spoiling them. This discovery is now generally adopted for vulcanizing in a heated atmosphere. When the vulcanizing is accomplished in steam, (which is found to be the only safe and practicable mode for the production of most articles,) a simple plain cylinder boiler is so constructed that one head can be removed; a railway is laid the entire length of the boiler, and a suitable carriage is loaded up, (being three or four floors or stories high,) on which the goods are placed, and the carriage rolled into the boiler, when the steam is admitted. After a few hours, the head is again removed, and the carriage rolled out. By this process, the goods become uniformly heated, and the chemical action by which the vulcanizing of the fabric is done, is thus valuable discovery of the mode of vulcanizing, we uniform and complete. For the knowledge of this are, however, indebted entirely to the English, by whom the discovery was originally made and patented.

Until about Jan. 1847, no piece of rubber one inch thick, could be vulcanized in the United States; since the vulcanizing by an atmosphere highly heated would overbake the surface before the centre of a thick piece could be acted on at all. The consequence was that the surface cracked, and crumbled, while the middle was only properly cured, or vulcanized. This formidable difficulty prevented the successful manufacture of rubber in thick masses, until the introduction of steam, in 1847. Since then, thick masses, such as piston packing, and valves for the largest steamers, railroad-car-springs, springs for triphammers, fenders, &c., have been made with entire success. The consumption of steam packing alone, requires about 3,000 pounds daily.

Within three years the value of the raw material from Brazil, has advanced over 100 per cent, and this advance will doubtless be permanent, if not farther increased. Most of the raw material is produced in Para, one of the northern States of Brazil, the whole population of which will not reach 250,000 inhabitants. It is frequently necessary for the natives to stand up to their waists in water, to gather the milky juice from the tree. Recent efforts have been made to introduce slave labor, to increase the production, but with very little success; since it has been found that none but native Indians can long endure the exposure.

To attempt a full history of the application of India rubber in the various arts, would occupy too much space. We shall therefore content ourselves by referring to some of the most important.

In 1825, the rudely formed Brazilian shoes were first imported in small quantities, which increased until the aggregate annual importation reached over one million dollars. This importation ultimately declined to a few thousand dollars, in consequence of the improvement of the manufacture in the United States.

The late Stephen C. Smith was among the first who took measures to improve the quality of rubber shoes, as made by the Brazilians. He was then living in Providence, R. I., and he sent to Brazil forms on which to prepare the substance into thin sheets, to enable him to work it in this country in any form he pleased. He succeeded. Another mode was to line and shape the rude Brazilian shoe, upon neat and proper lasts, and bind the edges with fur. This was done early in 1829 or '30. A few years afterwards, Mr. Smith and others obtained the rubber in these thin sheets, in great quantities from Brazil, and formed it into shoes. For many years this was the best article in use. As early as 1828, a gentleman of this city made shoes waterproof by interposing between the leather a lining of prepared rubber. In 1834, the Roxbury India Rubber Company made shoes of moleskin cotton cloth, with rubber between, and leather soles attached, with a binding of the same material. Many hundred thousand pairs were made and sold of this kind, but they were not elastic. In 1832-3, Mr. Atkinson invented a shoe formed of rubber, which had been re-manufactured in this country, presenting the outward appearance of leather. His process was then entirely new, and, with such improvements as have been made in the mode of manufacturing rubber since, it continues to the present time, and the article of rubber shoes, now so universally popular, is constructed on the same plan as that patented by Atkinson, in 1834; but the manner of treating the rubber is the result of a recent discovery which has not been made public, and while the export to Europe can be made in such large quantities as at present, it is not thought proper to to reveal the secret. It consists partly in imparting a most brilliant gloss, resembling patent leather.

This has been now three years in general use, and is destined to extend the application and consumption of India rubber more than any discovery since the invention of Hayward. Some manufacturers use so little rubber in the compound, that their article scarcely deserves the name of rubber shoe; the admixture of other substances being as two to one of rubber, and yet all the required elasticity is retained. The production of this article alone, in the United States, has now reached over ten thousand pairs every twenty-four hours, and no efforts have yet enabled the Europeans to acquire the art.

Justice requires that the original author of this discovery should be named, and, although Daniel Hayward has had less experience in making rubber than his brother Nathaniel, yet his success in the preparation and manufacture of it, which gives it the distinguishing quality of patent leather without its objectionable features, entitles him to a most prominent position among those by whose genius our country expands its energies and resources into new fields of industry, and rouses the jealousy of Europe. For many years, this most ingenious plodder remained unknown and unrewarded.

The consumption of rubber for the single article of carriage top cloths, has averaged about 2,000 pounds daily, for the last fifteen years. Sometimes more than 80 per cent of lamp black is used with the rubber. In the fabric of driving-bands for machinery, the daily consumption in the United States is about 2,000 pounds. This, combined with nearly double its weight of cheap earthy matter and suitable duck, produces, when properly made, a superior band. This can be successfully vulcanized only by the aid of steam. So likewise of railroad car springs, fenders, thick packing for steam machinery, &c. The daily consumption of rubber in the United States for car springs, is about 1,000 pounds, and fast increasing. The invention of springs of rubber for vehicles, was originally made by Mr. Lacy, and patented in England about twenty years ago. His plan was interposing discs of rubber between plates of metal, and the resistance of the rubber when compressed, gave the spring. How two subsequent patents can be extant for the same invention, is past our comprehension, unless the material justifies the presumption of a new invention. The spring as now used in this country, is made by mixing equal quantities, by weight of rubber and whiting, and adding five per cent of sulphur. Sometimes less whiting is used when the equal quantity is made up of lead or zinc to take the place of so much whiting. These materials are all ground together in the masticating machine till they are reduced to a uniform pasty mass; they are then rolled in calendering machines into a sheet, which is received on to a small mandul, and is allowed to accumulate till the desired size of disc is obtained, when it is placed in strong iron moulds, and submitted for five or six hours to steam at about 250 Fahrenheit. This is substantially according to the description of compounding, which is given in the English patent granted to Thomas Hancock in 1843, but the proportions are not given by Hancock. The quantity of sulphur for the best effect, is about five per cent by weight to the quantity of rubber, but less than this will accomplish the vulcanizing.

We have thus glanced rapidly over the field, and traced some of the principal points that have marked the progress of what now constitutes so vast and important a department of art and manufacture. We perceive that it has been a progressing business. No great achievement in the arts is ever brought about at one bold stroke. Discovery follows discovery step by step; experiment succeeds experiment, till at last perfection is reached. Like the telegraph, one discovery has led to another; and although many improvements have been made in the India rubber art, more important ones yet remain; and the man who shall discover a treatment of India rubber, by which it will be made capable of resisting the ravages of the weather for a long period of time, will build for himself a monument for the admiration of posterity, if not a fortune, to recompense him for such a contribution to knowledge, while the preservation of the milk of the tree to be transported in barrels and applied as wanted in the manufacture, would revolutionize the entire business. Who will first succeed in making this great discovery?

Law Intelligence.

SUPREME COURT OF THE UNITED STATES.—No. 26. Jacob Strader et al. *vs.* Christopher Graham. In error to the Court of Appeals of Kentucky. Mr. Chief Justice Taney delivered the opinion of the Court, dismissing this case for the want of jurisdiction. No. 45. The United States, appellants, *vs.* Baptiste Guillem et al. This cause was argued for the appellants, and for the appellees. No. 46. S W. Oakey, plaintiff in error, *vs.* John H. Bennett et al. The argument of this cause was commenced for the plaintiff in error, and continued for the defenant in error.

SUPREME COURT OF THE UNITED STATES, Jan. 7.—No. 29. S B. Preston et al. *vs.* C. Bracken.—No. 30. J. McNulty *vs.* J. Batty et al. In error to the Supreme Court of the Territory of Wisconsin. Mr. Justice Nelson delivered the opinion of this Court, abating the writ of error in each of these cases.—No. 17. J. Landis *vs.* J. B. Brant. In error to the Circuit Court of the United States for Missouri. Mr. Justice Catron delivered the opinion of this Court, affirming the judgment of the said Circuit Court in this cause.—No. 9. T. Henderson et al. *vs.* Lessee of the State of Tennessee, in error to the Supreme Court of Tennessee. Mr. Chief Justice Taney delivered the opinion of the Court, dismissing this case for the want of jurisdiction.—No. 46. S. W. Oakey, plaintiff in error, *vs.* John H. Bennett et al. This cause was argued for the defendants in error.—No. 47. E. Blanc, plaintiff in error, *vs.* G. W. Lafayette et al. This cause was argued for the plaintiff in error.—No. 50. Canal Commissioners of Pennsylvania, plaintiffs in error, *vs.* The State of Pennsylvania. The argument of this cause was commenced for the plaintiffs in error.

UNITED STATES SUPREME COURT, JAN. 8.—No. 35—J. G. Wilson vs. G. A. Sanford, et al. In error to the Circuit Court of the United States for Louisiana. Mr. Chief Justice Taney delivered the opinion of the court, dismissing this case for the want of jurisdiction. No. 50—Canal Commissioners, plaintiffs in error, vs. the State of Pennsylvania. The argument of this cause was continued by Mr. Alricks, for the defendant in error, and concluded by Mr. Porter, for the plaintiffs in error. No. 51—J. H. McCoy, appellant, vs. Z. Rhodes, et al. This cause was submitted on a printed argument, by Mr. Butterworth, for the appellant. No. 54—L. Cotton, plaintiff in error, vs. the United States. This cause was argued by Mr. Walker for the plaintiff in error, and by Mr. Attorney General Crittenden, for the defendant in error. No. 55—P. McGill, plaintiff in error, vs. J. H. Armour. This cause was submitted to the court on printed arguments, by Mr. Butterworth, for the plaintiff in error, and by Mr. Benjamin, for the defendant in error.

SUPREME COURT OF THE UNITED STATES, JAN. 9.—Rule No. 58. Ordered, that when a case is taken up for trial, upon the regular call of the docket, and argued orally in behalf of only one of the parties, no printed argument will be received, unless it is filed before the oral argument begins, and the Court will proceed to consider and decide the case upon the *ex parte* argument. (This rule to take effect after the present term.) No. 28. Charles J. Gaylor et al. vs. B. G. Wilder. In error to the Circuit Court of the U. S. for New York. Mr. Chief Justice Taney delivered the opinion of this Court, affirming the judgment of the said Circuit Court, with costs and damages at the rate of six per centum per annum. No. 201. John Henderson plaintiff in error, vs. H. E. Morton. The plaintiff in error having filed a statement that the matters in controversy had been agreed and settled between the parties, this writ of error to the Circuit Court of the U. S. for Louisiana was dismissed at the costs of the plaintiffs in error. No. 56. R. C. Stockton, appellant, vs. J. C. Ford. The argument of this cause was commenced for the appellant, and continued for the appellee.

SUPREME COURT OF THE UNITED STATES, Jan. 10.—T. N. Van Dyke, Esq., of Tennessee, was admitted an attorney and counsellor of this court. No. 196. Jecker, Torre & Co., appellants, vs. J. B. Montgomery. No. 197. J. B. Montgomery, appellant, vs. Jecker, Torre & Co. These causes were submitted to the consideration of the court on the records and printed arguments, by Mr. Coxe for Jecker, Torre & Co., and by Messrs Key and Johnson for Montgomery. No. 56. R. C. Stockton, appellant, vs. James C. Ford. The argument of this cause was concluded by Mr. Walker for the appellant. No. 57. The United States, plaintiffs in error, vs. Jabiel Brooks, et al. The argument of this cause was commenced by Mr. Attorney General Crittenden for the plaintiffs in error.

COURT OF APPEALS, ALBANY, Jan. 7.—The Chief Judge announced that hereafter, commencing to-day, the court would hold two sessions a day—taking a recess from 2 to 3½ P. M. This being motion day, the following motions were decided:—Blydenburgh, appellant, against Cotheal, respondent. Motion to dismiss appeal denied with costs. Van Wyck and wife, respondents, against Seymour and wife, appellants; Maison, appellant, against the same respondents. Motion to vacate an order entered, dismissing the appeal of Maison, granted on payment of costs. The Farmers' Loan and Trust Company and others, appellants, against Carroll and others, respondents. Motion on behalf of Daniel J. Carroll to modify the decree entered in this cause on the 19th October last, as to him; granted in part. Corwin and Corwin, respondents, against Corwin, appellant. Motion to vacate the order entered dismissing the appeal; granted on payment of costs of procuring the order. Raymond and others, appellants, against Purdy and others, respondents. Motion to dismiss appeal granted with costs. Raymond and others, appellants against Brewer and others, respondents. Motion to dismiss appeal granted with costs. Ward, survivor, &c., appellant, against Syme and others, respondents. Motion by appellant that the *remittitur* filed in the court below be returned to this court, that the judgment of affirmance heretofore rendered, be vacated, and that the cause be re argued, &c., denied with costs. The opening argument in No. 1 was resumed and continued until the hour of recess, 2 P. M., and not concluded.

COURT OF APPEALS, Albany, Jan. 10.—This being motion day, several motions were made, and the following decided:—Thompson, appellant agt. Bowne and another, respondents; Bowne, appellant, agt. Thompson and another respondents. Motion to dismiss appeals in these causes granted by default. Jacks and others, appellants agt. Nichols, respondent (No. 10). Motion by appellants to vacate the default entered in this cause on the 3d inst. granted on terms. Smith, appellant, agt. Lynes and others, respondents (No. 15). Motion to vacate the default entered in this cause on the 4th inst. granted—and that the cause stand as No. 48½ on the calendar.

PHOSPHATE OF LIME.—It seems singular that on the property of the New Jersey Exploring and Mining Company, about twelve miles from Dover, in this State—who it is well known possess one of the richest mines of red oxide of zinc in the world—there should also have recently been discovered the only mine, it is supposed, of phosphate of lime that has anywhere been found in a mass. It occurs in a vein of rock, one side of which is gneiss, the other, serpentine. The vein of phosphate of lime is about six feet wide at the surface, broadening as it descends. It has been ascertained to extend two miles in length. A specimen has been analyzed by Dr. Antisell, of New York, who states it to contain ninety-three per cent of pure phosphate of lime. It is, in fact, the same material as calcined bones, dissolving entirely in muriatic acid. We have seen a specimen, but not the vein itself, and presume there is no doubt of its great value. It is an admirable manure, an article so widely needed through the State. In the vicinity, it must be largely useful, and its benefits can only be limited by the obstacles to cheap and easy transportation. These are the same as now possessed by the Zinc Company, namely, a cartage of three miles, to Hoptacong lake, down the lake to the Morris Canal, on which it may of course be easily transported to Newark and New York.—*Newark Advertiser.*

Political Intelligence.

NEW JERSEY LEGISLATURE.—The legislature of New Jersey, meets at Trenton, to day. There is a tie in the Senate, and a democratic majority of two in the House. A U. S. Senator is to be elected, who will be a democrat. Com. Stockton, ex-Gov. Vroom, and Gen. S. V. R. Wright, are the most prominent candidates.

INTERESTING CALIFORNIA MISCELLANY.

Scene in the Mountains.

[From the San Francisco Journal of Commerce.]

A company of damming miners upon one of the gold rivers in the interior, recently played upon some greenhorns quite a rich practical joke, which, however, proved to be rather a barren and worthless affair to the latter, although productive of considerable *oro* to the former. The diggers, after a fruitless search after gold on the inside of their dam, found a soft and porous rock, which proved as destitute of gold as the rest of their claim. Determined, however, to realize something to pay them for their trouble, they immediately sprinkled a considerable amount of the precious metal all over the rock, as well as in its interstices and crevices, and then proclaimed abroad that they had found a rich vein of golden rock in their dam, inviting every one to call and see it. From far and near the diggers came to see the wonderful discovery, whilst claims in the surrounding dams rose in price in proportion to the excitement occasioned by the golden rock. Many and large were the offers made to the various claimants in the golden rock dam. But it was no go—the party concerned knew well what they were about, and would not sell one claim without selling all. Meanwhile, so intense had become the excitement, that no work was done for several days in the whole neighborhood, and the owners of this immensely rich claim, seeing the position of affairs, determined to "strike while the iron was hot;" and accordingly, up went the whole of the claims in the "Golden Rock Dam," to be sold at auction, to the highest bidders, for cash, at sundown the next day. The excitement still raged, and, at the time appointed, the concourse of diggers was tremendous upon the scene of action. The sale commenced, and up, up went the bids to an astonishing price, until about dusk, when the whole was knocked off to a party of lucky *hombres*, who promptly paid the money, a sum far exceeding all the costs and outlays upon the dam, and received the titles in lieu. Morning came, and the new owners went to work, amid a large concourse of miners, who had assembled to see the opening of the golden vein. Nobly did the pick and crowbar do their duty that day, and for many hours did the workmen toil, the perspiration rolling in streams over their bronzed faces and sinewy limbs. But nothing further than the glittering particles on the surface of the rock rewarded their labors. It was noon, and as the wearied laborers sat resting at their meal, and speculating upon their disappointment in not having as yet realized but a few ounces, and the barrenness of the interior of the rock, when it was suggested to hunt up the former owners, and see what they had to say of it. The hunt commenced, but not a soul had seen the auctioneers since the evening before, and wearied, at length, with their vain search, the diggers returned to their camp, overpowered with dreadful suspicions, where they found an Indian boy, with a note, couched in the most insolent terms of mockery, which fully confirmed all their most woful apprehensions. They were duped—robbed of all their hard earned ounces, and had nothing to show for them. But no time must be lost—they might yet overtake the villains, and recover their bright and glittering dust. Vain hope! The diggings were scoured in every direction, and for miles around, but the swindlers had escaped, and the poor dupes returned to camp amid the jeers and ridicule of their compeers, a wiser and shrewder set of men.

Quartz Mining on the Cosumnes.

[From the Sacramento Transcript, Nov. 28]

Capt. Garrett has purchased two large quartz veins on the eastern side of the north fork of the Cosumnes, which give promise of a large yield of gold. From a hasty examination of these veins, we are led to believe that several thousand tons of quartz rock can be obtained at a trifling expense, as they run back from the river in a huge bluff, where they can be easily laid bare. A large quantity of the rock is not covered with soil, but it is not likely that it bears the metal as copiously as that which may be found lower down in the bowels of the earth.

There has also been another large quartz vein discovered several miles south of Mud Springs, from which pieces of gold to the value of one dollar have been taken. This vein is about two feet under the surface of the earth, and has been found to extend for a considerable distance along the channel of the stream, which is dry during the greater part of the year, and can be readily worked. This vein, we believe, has not been taken possession of by any one; or, at least, it has never been worked to any extent. We observed a few pieces of the rock lying along the banks, which the curious had rolled up for the purpose of examining, but no one has ever tested its real value. The whole region of country in the vicinity bears gold, and some fortunate hauls have already been made there.

Professor Spieker, of San Francisco, by his newly discovered principle of extracting gold from rocks, states that almost every species of stone in California bears this metal to a greater or less degree. If the gold can be extracted from hornblende, green stone, trap, etc., by this process, doubtless the amount that is ordinarily obtained with quicksilver will be greatly augmented by following the method of Prof. S.

Every miner of any experience is aware that talcose slate is a gold bearing rock, but we do not suppose that any one in the State has yet engaged in pulverising it, as has been done in the case of quartz.

Outrage at Moquelamos River.

[From the San Francisco Picayune]

One of the greatest outrages that ever came under my notice has been recently committed in this neighborhood, repulsive alike to the feelings of every good American as to foreigners. A place called Drytown, or Placer seco-diggings, discovered by Mexicans, and already settled by them to the number of 400 or 500, was surprised, a few days since, by a party of armed Americans, numbering 200, notifying them that if they did not leave said diggings in the space of eight days, that they would eject them by force of arms. This, of course, alarmed the peaceable Mexicans, but not sufficiently to make them evacuate the place. A day before the expiration of the time appointed by the Americans that they should evacuate, a squad of them appeared at the diggings, and told the Mexicans that, if they did not all disappear at the time appointed, that they would shoot them down indiscriminately, men, women, and children, and burn down their houses, and take possession of their effects, which purpose they would have carried out, had it not been for the timely interference of Judge Smith, the county judge and myself. We arrived at the spot about two hours before the time appointed for their bloody design, and by force of argument persuaded them to desist from their unlawful and outrageous undertaking, but we could only get from them a respite of four or five days, when they said they would carry out their design as originally intended, excepting only families and traders. They have already burned several Mexican shanties, scattered the poor Mexicans all over the country, taken possession of dirt that the majority of them had been throwing up for the last three months, and depopulated a place, or town, which promised to be one of the largest settlements in the mines. The leaders are James B. Steadman, one Washington, and John O'Brien, all from Oregon Bar, on Mequelume river, where they had been holding meetings for the last month for the aforesaid purpose. The fact is it is, getting late for river digging, and there is no doubt that their only object is to rob, which fact is confirmed by their having already apportioned out to each man concerned in this revolutionary act, the dirt thrown up by the Mexicans. Judge Smith has dispatched a messenger to San Jose, calling upon the government for a company of U. S. cavalry, with which force, peace and order can be easily restored, and the foreign miner who pays his tax, protected.

The County Jail.

[From the Alta California, Nov. 27.]

This building, now erecting on Broadway, promises to be a very substantial structure. Its location is in Broadway, between Pacific and Dupont streets, with a front of sixty feet on Broadway, and 137 feet on an alley-way twenty feet wide. When completed it will be three stories in height, and finished in the Norman style of architecture—the cornices and friezes of freestone, imported from Sydney. The main portion of the building will be of brick. The cells are in the first and second stories, and number about sixty. Those now completed are ten feet by six, the walls of brick, faced with China granite. We learn from the architect that it is the intention to have the cells in the second story somewhat larger. Each cell will be supplied with water from a cistern of large capacity, and waste pipes will connect with the sewers. The jailor's rooms and the offices will be in the third story. The basement, built upon rock foundation, is nearly completed, and in a few months the main portion of the building will be ready for occupation.

Humboldt Bay.

[From the Alta California, Dec. 1.]

The Sea Gull steamer, Captain Cressy, on her last trip entered the bay, being the first steam vessel that ever crossed the bar. The captain reports the least water he found at half tide to be "quarter less five," or twenty-eight and a half feet, depth enough for the largest merchantmen probably, that will ever sail the Pacific. He was perfectly delighted with the bay and the country around it. It is destined to be one of the most delightful and desirable spots on the Pacific coast. The entrance to the bay is plain and easy, the anchorage good, nor winds nor tides will trouble the resting ship when once within. Its agricultural advantages are said to be very great. There is a wide extended succession of arable acres, stretching from the borders of the clear waters to the foot of the mountains and hills and in beautiful quiet valleys between them, from whose rich breast the agriculturist may gather subsistence, health, and luxury, if he will. From the nature of the climate this is certain. It is believed by many that the entire climate of this country will materially change with the altering circumstances of its surface; and that the dry season will cease to be so dry as it is at present. Whether this change occur or not, the Humboldt country is pretty certain to flourish. There they have not unfrequent showers, and nature with her smile unending, woos the farmer to draw upon her exchequer for his full share of the abundant wealth therein. Then, also, it is within the region of the placers. Good roads have been opened from the bay, leading from Humboldt, Eureka and Union Town, to the deposits on the Trinity and adjacent streams, and it is thought that the business done on their account this year has been only trifling, compared with what will be done hereafter. The country is full of timber also, and can furnish lumber to the whole country for years to come, and not miss it. The business of bringing piles from thence for the improvements in this place is already one of no small importance; and, in fine, numerous circumstances point it out as a section of great interest, wealth and prosperity yet to be.

Official Courtesy.

[From the San Francisco Herald, Dec. 1.]

His Honor, Mayor Geary, together with a few of his friends, were received yesterday morning, at the instance of the French Consul General, on board the French national corvette, the Serieuse, and entertained by the very gentlemanly commander at breakfast.

The Marine Arrivals.

[From the Pacific News, Nov. 26.]

The number of vessels entering our harbor is really a matter of wonder. Within the forty-eight hours ending on Sunday night, nearly sixty sail entered the Golden Gate. The history of the world presents no comparison. The arrivals yesterday were between twenty and thirty sail.

Gov. Wright of Indiana on the Compromise Measures.

The message of Gov. Wright was delivered to the Legislature of Indiana, on the 30th ult. The following are his views upon the Compromise measures passed at the last session of Congress:—

It is not a practical question whether these measures of peace, recently framed by great and good men, in the same spirit which actuated our fathers in days gone by, are in every respect such as meet our unqualified approval. It has been well said that the lives of the best of us are spent in choosing between evils; and it is often a bounden duty to endure a temporary and incidental evil for a permanent and inherent good. A domestic institution, forced upon our forefathers in colonial days, rather than voluntarily adopted by them, is, for the present, the necessary policy of our Southern brethren. Any sudden abandonment of that policy is impossible. Even its gradual relinquishment is beset with difficulty and embarrassment. The patriots of the revolution—convened to frame a government that has endured for three-quarters of a century, has spread over half a hemisphere the blessings of peace, of political and religious freedom, and of national prosperity—assented to the great principle that each State of the Union is sovereign, as to their internal government, and her social relations. Without this recognition, absolute and unconditional, the thirteen original States would never have concurred in the federal compact. That was the great conservative element which bound hearts, though it could not reconcile opinions. Without that element, the Union would not have been created then. Without it, the Union cannot be preserved now.

Indiana, a central State, has always maintained a high conservative position, especially on that exciting question of the day, which has threatened, more seriously than any other, the integrity of our confederacy of States. She is, indeed, convinced that she has wisely selected her own domestic policy. She is satisfied with the degree of prosperity, under that free policy, she has attained. Our State was the nineteenth admitted into the Union. In wealth, in agriculture, and commercial importance, she is now the fifth, if, indeed, she be not the fourth. Of the eighteen States which composed the Union when we were admitted, four, at most are in our advance; and not one of those since admitted, has come within sight of us. Maintaining her position ahead of all her younger sisters, Indiana has walked quietly in advance of fourteen of the older States. In our onward progress, we have uniformly acted toward each, equal to equal. Our compacts with the great confederacy to which we belong, and every member of it, have been faithfully kept, in letter and in spirit. Neither by legislative act nor otherwise, have we withheld from any citizen of the Union the rights which, under the federal compact, are assured to him. To this day, no cause of complaint has been given, nor, so far as I know, has complaint been made against Indiana, by any State in the Union. Above all, Indiana recognizes the imperative duty, by every good citizen, of obedience to the laws of the land.

Whatever difference of opinion may exist as to the late compromise measures enacted by Congress—however much ultra men in the North or in the South may oppose them—there is but one course of action for the true patriot to pursue; and that is, unhesitatingly and in good faith to carry out their enactments.

There is no safety for property, for liberty, nor for life, except in the absolute supremacy of the law. There is no higher duty of the citizen, than to maintain by word and deed, that supremacy. As we value the heritage, rich beyond all price, purchased, not with gold, but with the life's blood of the good and brave—that heritage bequeathed to us by our fathers, and which we, in turn, must bequeath inviolate to our descendants—let us bear in mind that the first public act of disobedince to law is the first fatal step on the downward road to anarchy.

The constitution of this great confederacy, written on parchment, may be rent asunder, if it be not written also on the hearts and affections of the people. It is written on ours. We love, we respect it—we give it our highest sanction, alike for the sake of the sacred principles of human liberty embodied in its provisions, for the unnumbered blessings we have enjoyed under its rule, and in memory also of that band of great and good men, who conceived and established it. This truth should be understood by our people, that this Union cannot be preserved by force. If it could, it would not be worth preserving. The bonds and ligaments that bind us together, are moral, and not physical. Our glorious Union is one of consent, and not of force. It is a Union of confidence, of trust, of love, and of affection. When these are gone, the Union loses all its attraction and value.

At no hour of our history have we required, more than at the present, an infusion into our councils of that spirit in which the articles of our confederacy were first conceived. As representatives, as citizens of Indiana, as citizens of the United States, we have difficult, delicate, important duties to perform. Foremost among these is the obligation to oppose, by every lawful means, that spirit of factious fanaticism, alike suicidal wherever it has birth, which insiduously assumes the garb, in one section, of philanthropy, in another, of State rights. By speech, by action, by concession, by forbearance, by compromise, by the influence of moral suasion and the strong power of kindness—by each and all of these means, let us seek to allay the spirit of lawless misrule, that spirit which instals each man's opinion the arbiter of constitutional rights, or which coolly estimates the value of this Union, and looks with steady eye on a separation of these States, the certain herald of bloodshed and a thousand horrors—a separation to be surely and speedily followed by war in its most odious form—servile, perhaps, as well as civil—war among those of the same race, the same name, the same blood—war that shall bring together, in hostile array, neighbor against neighbor, brother against brother, son against sire.

To avert calamities so direful, Indiana will cast even to the last, the entire weight of her influence. She will be just to each and every member of the confederacy—just to the constitution—just to the laws. She will abide by that constitution—abide by the laws—and, above all, she will abide by the compromises made by our fathers—the compromises made by the great and good men of this day. She will hope, she will pray, that the same kind and overruling Providence which watched over our fathers at the adoption of the constitution, and has sustained in every crisis, and cheered in every hour of darkness since, will direct their sons, also, in the paths of wisdom and of peace, and enable us to transmit to posterity that sacred instrument, a guide and a blessing in the future, as it has ever been in the past.

Indiana takes her stand in the ranks, not of Southern destiny, nor yet of Northern destiny. She plants herself on the basis of the constitution, and takes her place in the ranks of American destiny.

ENTERPRISE OF A WHALER.—Capt W. T. Walker, late of ship Envoy, of this port, returned home yesterday from San Francisco, where he left his ship, after disposing of her cargo at that port. The Envoy was formerly employed in the whale fishery from Providence, and had been well used up in the service, when in 1847, she was purchased at a comparatively trifling cost, by a merchant of this city, with the purpose of refitting her for the same business. This design was, however, abandoned, owing to her great size and the difficulty of obtaining a suitable person to take command of her, and she was at length stripped, and sold to Mr. Wm. O. Brownell, a dealer in old junk, for the sum of $525, to be broken up. The new purchaser, however, conceived the idea of refitting her for sea, and having done so, he fortunately engaged Capt. Walker to command her, the captain becoming the purchaser of one quarter of the ship, and the Envoy accordingly sailed from this port July 4, 1848, on a whaling voyage, and proceeded to the island of Whytootacke, where captain W. had on a previous voyage stored 1,000 barrels of oil, which he had purchased at a merely nominal price, from a wrecked vessel. Having taken on board the 1,000 barrels of oil, Capt. W. next proceeded to Manilla and shipped the oil thence to London, where it was sold, netting to its owner the sum of $9,000. From Manilla, the Envoy proceeded to cruise for whales in the North Pacific Ocean, where, in the short period of fifty-five days, she took 2,800 barrels of whale oil, and returned to Manilla in the fall of 1849; and thence again shipped to London 1,800 barrels of oil and 40,000 lbs. of whalebone, which netted £7,750, or $37,500. The Envoy again sailed for the Pacific, and during the last season took 2,500 barrels of oil and 35,000 lbs whalebone (including, with the oil previously on board, 3,500 barrels); and the whole amount of catchings having been 5,300 barrels of whale oil and 75,000 lbs. of whalebone. The Envoy then proceeded to San Francisco, where she arrived on the 6th of November; and Captain W. there sold 25,000 gallons of oil at $1 per gallon, and the remainder of the cargo (85,000 gallons) at 57 cents per gallon. The whalebone, worth $12,500, has been shipped home in the brig P. M. Prescott, for Boston. At San Francisco, Captain W. now holds the refusal of an offer of $6,000 for the ship.

The results of the voyage may therefore be summed up as follows:—

Net profits on 1,000 barrels of oil shipped to London	$ 9,000
Do. do. on oil and bone, catchings of first season	37,500
Sales at San Francisco	73,450
Value of whalebone shipped home	12,500
Value of ship	6,000
Total	$138,450

The Envoy was considered unseaworthy by the insurance companies, at the time of her sailing from this port, and they accordingly declined taking any risk upon her. The sanguine and fortunate projector of the enterprise, Mr. Wm. O. Brownell, accordingly assumed the entire risk, including the one quarter owned by Capt. W.—*N. B. Mercury, Jan. 8.*